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VME System Installation Checkout Procedure

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1.0 Introduction

2.0 Start ‘checkout’ software utility

2.1 Log onto Sun computer as engineer.
2.2 Enter the following command to start ‘checkout’ software utility.
./checkout

Expected Result:
Main window for hardware checkout utility is displayed.

3.0 Select desired FEC name from scrolling list by clicking with left mouse button.

4.0 Click on the General Info pushbutton.

Expected Result:
The General Information window is displayed. The VME ID and base address is displayed for all hardware boards expected to be installed in the selected VME chassis. The displayed serial numbers match the board serial numbers defined in the inventory database.

4.1 Close the General Info window by clicking on the Close pushbutton.

5.0 Click on the V108 Utility Module pushbutton.

Expected Result:
The V108 Utility Module window is displayed and all parameters are updating continuously.

5.1 Chassis Fan Status

Expected Result:
The Chassis Fan Status Field indicates OK.

5.2 Temperature Status

Expected Result:

The Temperature Status Field indicates OK.
The displayed temperature is less that 55 deg C (131 deg F).

5.3 Power Supply Status

Expected Result:
The Chassis Fan Status Field indicates OK.

5.4 Event Link

Expected Result:
The Event Link field indicates OK.
The Last Detected Event Time is changing and the corresponding event code indicates an event code that is expected. Event codes 192 and 45 are two codes that are expected.

5.4.1 Remove event link cable from V108 Utility Module.

Expected Result:
The Event Link field indicates FAIL.

5.4.2 Reconnect event link cable to V108 Utility Module.

Expected Result:
The Event Link field indicates OK.

5.5 RTDL

5.5.1 Select the RTDL code 0xc0, by clicking on the field labeled 'Selected RTDL Code' and entering "0xc0". This RTDL code increments by 1 on every 5 second event. The value that the V108 Utility Module detects for this RTDL code is displayed in the field labeled 'Value'.

Expected Result:
The RTDL field indicates OK.
The RTDL Value displayed is incremented by 1 every 5 seconds.

5.5.2 Remove RTDL cable from V108 Utility Module.

Expected Result:
The RTDL field indicates FAIL.

5.5.3 Reconnect RTDL cable to V108 Utility Module.

Expected Result:

The RTDL field indicates OK.

5.6 Reset Link

Expected Result:
The Reset Link field indicates OK.

5.6.1 Remove event link cable from V108 Utility Module.

Expected Result:
The Reset Link field indicates FAIL.

5.6.2 Reconnect reset link cable to V108 Utility Module.

Expected Result:
The Reset Link field indicates OK.

5.7 Reset Chassis Using Reset Link.

5.7.1 Click on the pushbutton labeled ‘VME Reset’. The reset address is read from the Utility Module and sent to the Reset Link Master system to trigger a VME reset. The Utility Module detects its unique reset address on the Reset Link, thereby triggering a VMEbus reset.

Expected Result:
The message “Sent address x to reset link”, where x is the address, is displayed on the bottom of the main window.
The Utility Module window closes automatically.
The VME Chassis is rebooted.

5.7.2 After the front end computer completes the reboot, click on the V108 Utility Module pushbutton.

Expected Result:
All values are displayed as they were before the reboot. This is done to verify that the front end computer reboot completed successfully.

5.8 Close the V108 Utility Module window by clicking on the Close pushbutton.

6.0 Click on the V115 Waveform Generator pushbutton.

Expected Result:

The V115 Waveform Generator window is displayed and all parameters are updating continuously. Data is displayed for all waveform generator channels expected to be installed in the selected VME chassis

6.1 Load Waveform Setup

6.1.1 Click on waveform setup Type field, and select the ClearAll' option.
6.1.2 Click on button labeled 'Click to Load Waveform Setup to Hardware'.

Expected Result:
The message "Loading waveform setup to hardware" is displayed at the bottom of the window indicating that the load is in progress. When the load is complete the message "Done Loading waveform setup to hardware" is displayed.
The Output value indicates 0, and the Loopback value indicates 0 for all waveform generator channels.

6.1.3 Click on waveform setup Type field, and select appropriate option.
6.1.4 Click on button labeled 'Click to Load Waveform Setup to Hardware'.

Expected Result:
The message "Loading waveform setup to hardware" is displayed at the bottom of the window indicating that the load is in progress. When the load is complete the message "Done Loading waveform setup to hardware" is displayed.
The Output value indicates -2048, and the Loopback value indicates -2048 for all waveform generator channels. The values change when the waveforms are generated. The output changes for some channels may not be seen on the display.
The waveform begins on the 5 second event (192) from the output value –2048 (-full scale). A unique waveform is defined for each waveform generator channel consisting of a number of square, triangle, upramp, or downramp waveforms. Each waveform period is 0.125 seconds (90 720 Hz ticks). The ending output value is -2048.

6.2 RTDL

6.2.1 Select the RTDL code 0xc0, by clicking on the field labeled 'Selected RTDL Code' and entering "0xc0". This RTDL code increments by 1 on every 5 second event. The value that each Waveform Generator detects for this RTDL code is displayed in the column labeled 'RTDL Value'.

Expected Result:
The RTDL Value displayed for each waveform generator channel indicates the same value and is incremented by 1 every 5 seconds.

6.3 View Analog Outputs

6.3.1 Using an oscilloscope, view the analog output for each waveform generator. Where a Low Res Power Supply Interface Module is used, view the output at the respective module. Where the waveform generator connects directly to the power supply, disconnect the fiber optic cables at the power supply and connect the fiber optic cables to the Waveform Generator to Low Res Interface Test Box. View the output of the Test Box.

Expected Result:
The expected waveform is seen for each Waveform Generator / Low Res Power Supply Interface Module

6.4 Loopback

6.4.1 View loopback parameter for each waveform generator channel.

Expected Result:
The loopback value matches the output value for each channel. Note that when values are changing the loopback may not exactly match the output value. This is due to the sequential reading of the values from hardware.

6.4.2 Clear waveform for first waveform generator channel by clicking on the Output cell for the selected waveform generator.

Expected Result:
Both the output value and the loopback value change to 0. This verifies that the loopback data is being generated from the Low Res Power Supply Module that is receiving the output value, thereby confirming fiber optic cabling.

6.4.3 Continue above step for each waveform generator channel.

6.5 Close the V115 Waveform Generator window by clicking on the Close pushbutton.

7.0 Connect MADC inputs.

7.1 Select four Low Res Power Supply Interface Modules.

7.2 Connect a jumper cable from the analog output of each module to J0 on each of the four MADC A/D I/O panels. Note the waveform that is generated by each of the four Low Res Power Supply Interface Modules.

8.0 Click on the V113/V114 MADC System pushbutton.

Expected Result:
The MADC System window is displayed.

8.1 Click on the pushbutton labeled 'Configure MADC Group 0'. This will automatically configure group 0 for the selected MADC as follows.

Reset timestamp on 5 second event (192)
All 64 channels are defined in the scan list.
Arm on 5 second event (192)
Scan on 720 Hz event
Scan continuously

Data acquisition is automatically started.

Expected Result:
The following messages are displayed at the bottom of the window.
Configuring MADC Group 0
Done Configuring MADC Group 0

8.2 Click on the pushbutton labeled 'Plot New Data'.

Expected Result:
The value in the scan index field changes indicating that the MADC is updating its data buffer.
Each waveform plot displays the expected waveform.

Note: To zoom in on the waveform hold the shift key and use the left mouse button to select the desired zoom area. To reset the zoom click the right mouse button and select 'Reset Zoom'.

8.3 Close the MADC System window by clicking on the Close pushbutton.